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Socio-Cognitive Skills: A Possible Determinant of Life Satisfaction in the Elderly

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SOCIO-COGNITIVE SKILLS: A POSSIBLE DETERMINANT OF LIFE SATISFACTION IN THE ELDERLY

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Masters of Arts

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Gale R. Gray

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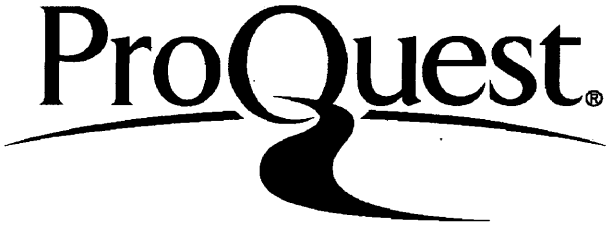

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This thesis is submitted in partial fulfillment of

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Gale R. Gray

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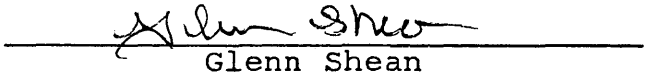

Glenn Shean

DEDICATION

I would like to dedicate this paper to my parents, Robert and Charlotte Gray. I would never have had the courage to come this far without their constant encouragement and faith in my ability to accomplish anything I set my mind to. All my love, Gale.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

The writer wishes to fondly express her gratitude to Professor Deborah G. Ventis, under whose close supervision this investigation was conducted, for her patient guidance, understanding support, and knowledgeable criticism throughout my work on this project. The author is also deeply appreciative of the time and energy expended by Professors Debbie Foss-Goodman and Glenn Shean. Additional thanks goes to Professor Debbie Foss-Goodman for sharing with me her statistical expertise and her constant support.

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

The purpose of this study was to test a revised version Liang, Dvorkin, Kahana and Mazian's (1980) model of elderly life satisfaction. This revised model involves several changes from the original model. First, a distinction is made between the use of subjective and objective variables, such as subjective ratings of health (excellent to poor) versus objective health ratings on a scale that includes a checklist of various chronic health problems. Second, several of the variables used in Liang et al.'s model are separated into other distinct factors. For example, in the model developed by Liang et al. (1980) socio-economic status and education were combined into one variable, whereas in the present study, these two factors are investigated as two separate variables. Finally, two new variables are included in the revised model that have not been previously researched in relation to life satisfaction in the elderly. These new variables involve measures of socio-cognitive skill, which include both an objective and a subjective measures. It is proposed that if the elderly possess inadequate socio-cognitive skills or believe that they lack these skills then they may become socially isolated and thus be less satisfied with their lives. To investigate this revised model, 60 elderly subjects volunteered to fill out a questionnaire and complete two tasks designed to measure their socio-cognitive skills. The results indicate that all variables used in this present study are significantly correlated with reported levels of life satisfaction. Furthermore, the combined effects of two variables, subjects' reported feelings of loneliness and isolation from their families and a measure of person perception, accounted for 50.5% of the variability in the levels of life satisfaction reported by the subjects. Possible implications of this study and several probable interventions for increasing life satisfaction in the elderly are discussed.

SOCIO-COGNITIVE SKILLS: A POSSIBLE DETERMINANT OF LIFE SATISFACTION IN THE ELDERLY

Socio-cognitive Skills: A Possible Determinant of Life Satisfaction in the Elderly

In the past decade a tremendous amount of research has been conducted in an attempt to clarify the variables that affect life satisfaction in the elderly. Previous researchers have found certain variables consistently associated with life satisfaction, such as health and financial satisfaction (Adams, 1971; Edwards & Klemmack, 1973). Other variables, however, have yielded inconsistent findings. For example, controversy has surrounded social integration and how it should be defined and measured (Connor, Powers, & Bultena, 1979; Liang, Dvorkin, Kahana, & Mazian, 1980; Mancini, 1979).

Liang et al. (1980) attempted to explain these contradictory findings by incorporating both subjective and objective measures of social integration in their investigation. These authors proposed that the impact of objective social integration on life satisfaction would be mediated by subjective integration. They also noted that the interrelationships between social integration and other factors affecting life satisfaction have been oversimplified. Consequently, they developed a model of social integration which included several other factors that have been found to affect life satisfaction. A diagram of Liang et al.'s (1980) model is shown in figure 1.

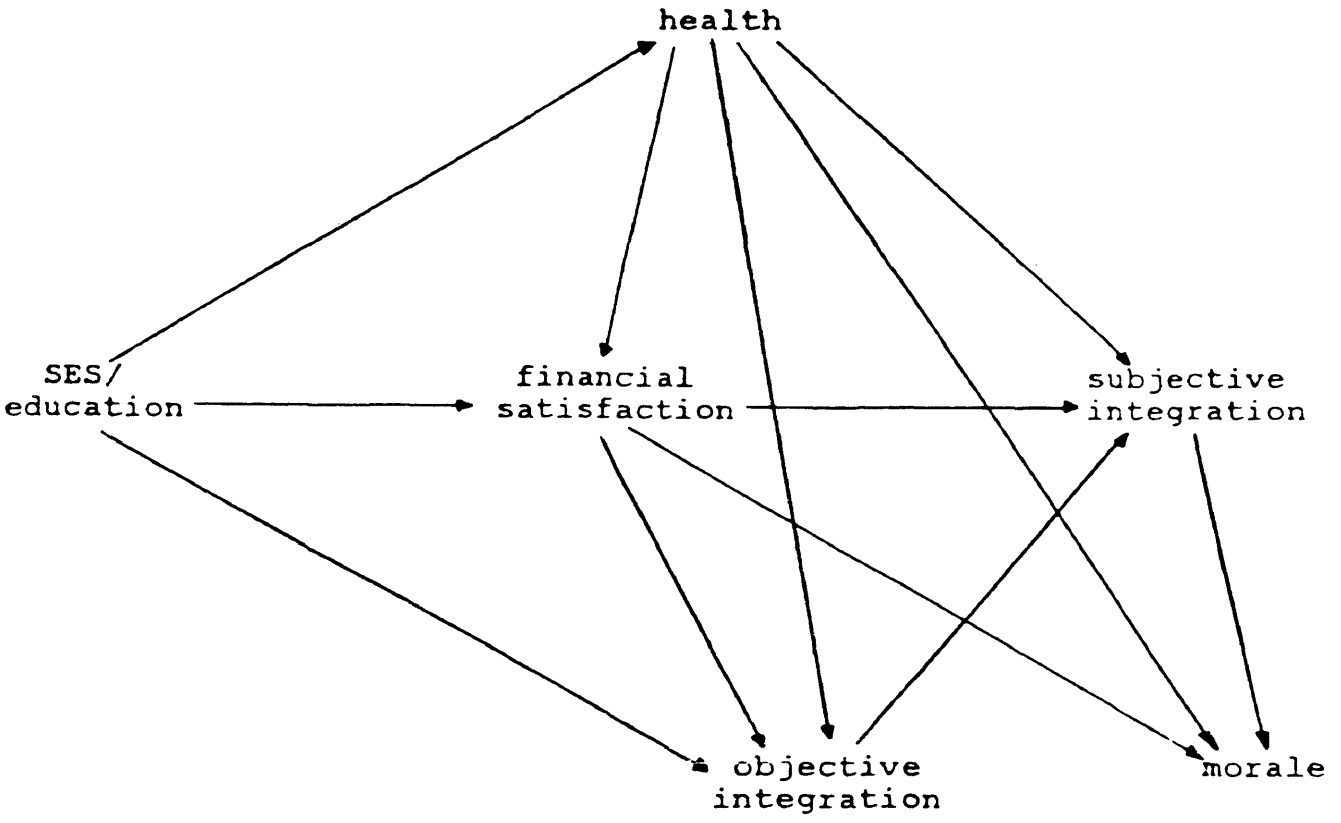

Figure 1. Liang, Dvorkin, Kahana & Mazian's (1980) Model of Life Satisfaction.

Insert Figure 1 about here

This model specified causal relationships between health, socio-economic status (SES)/education, financial satisfaction, objective integration, subjective integration, and life satisfaction. Only three of the variables investigated directly affected life satisfaction. These factors were health, subjective integration, and financial satisfaction (see Figure 1). Health accounted for the largest total effect and financial satisfaction the smallest. Objective integration was only indirectly related to life satisfaction, through its relationship with subjective integration. Furthermore, SES/education, another objective variable, was also found to be only indirectly related to life satisfaction through its relationship with financial satisfaction, a subjective variable. Therefore, based on Liang et al.'s (1980) results, it appears that subjective variables are at least as important and may be more important than objective variables in predicting life satisfaction.

The distinction between subjective and objective variables has not been throughly investigated in past research (Liang et al., 1980). This seems to be an area that needs further investigation, especially since subjective control beliefs appear to be important in life-span developmental research (Bandura, 1981). Brandtstadter

(1984) proposed that an action-oriented perspective in developmental psychology has important implications when dealing with maintenance of developmental processes. He stated that such things as physical health and intellectual functioning may depend on personal expectations. Therefore, adults' subjective perceptions of their situation and abilities may account for more variability in life satisfaction than their actual circumstances and skills. Consequently, one objective of the present study was to further investigate the importance of subjective variables in predicting life satisfaction.

A second objective of this study was to examine several of the variables in greater detail by separating them into distinct factors, as suggested by Liang et al. (1980). For example, in Liang et al.'s (1980) study socio-economic status (SES) was obtained by using two measures (education and/or income) and then combining this measures to determine the subjects' SES. In doing so, Liang et al's findings may have oversimplified the possible relationships between SES and the other variables used in their investigation. Thus, using distinct measures for several of the variables that are proposed to affect life satisfaction may clarify some of the previous relationships found by other researchers.

The final purpose of this study was to expand Liang et al.'s (1980) model to include additional variables. Of particular interest is the effect that socio-cognitive skills may have on life satisfaction. It is possible that

people whose skills are inadequate become socially isolated and, therefore, less satisfied with their lives. In order to make the specific predictions in this study more understandable, each of the variables will be defined, and the past research on these variables presented; then the specific hypotheses will be discussed.

Life Satisfaction

Research on life satisfaction in the elderly has been focused on delineating the abilities and resources needed to adjust to changes that occur as a person grows older. Life satisfaction is often defined as a multidimensional measure that represents the complexity of psychological well-being (Hoyt & Creech, 1983). Various measures of life satisfaction have been developed, for example the Affective Balance Scale (Bradburn, 1969), Lawton Morale Scale (Lawton, 1975), Current Happiness Scale (Baldassare, Rosenfield, & Rook, 1984; Fengler, 1984), Life Satisfaction Rating Scale (Neugarten, Havighurst, & Tobin, 1961), and the Life Satisfaction Index A (Neugarten et al., 1961). A study conducted by Lohmann (1977) found that scales developed to measure morale, life satisfaction, and adjustment were highly correlated. The most widely used scale for research on the elderly has been the Life Satisfaction Index A (Neugarten et al., 1961). This instrument consists of three factors, which measure satisfaction with the past, the present, and optimism towards the future (Hoyt & Creech, 1983). Therefore, this scale is especially appropriate when

investigating life satisfaction in the elderly, because it takes into account their feelings about their entire lifespan, not just how they feel about their present circumstances.

Health

As mentioned, health has consistently been found to affect life satisfaction, however, this variable has been measured in a variety of ways. Doyle and Forehand (1984) reported that self-perceived health was the strongest predictor of life satisfaction. Other researchers have also shown that people's perceptions of physical well-being affect their rating of life satisfaction (Adams, 1971; Granick, 1973; Jeffers & Nichols, 1961; Palmore & Kivett, 1977). Objective measures of health (e.g., number of physical impairments) have also been found to affect life satisfaction (Usui, Keil, & Phillips, 1983). Therefore, this variable has been measured with both self-rated and functional aspects (whether their health interferes with accomplishing daily-living tasks), but past research on life satisfaction has not included both aspects of health as separate factors. Consequently, there may be important relationships between health and life satisfaction that have gone undetected. For example, income may be related to objective health measures, but not to subjective health measures, in that people with lower incomes may have more health problems, but rate their health at the same level as people in a higher income bracket. This may be explained by

the way people subjectively rate their health. They could possibly compare their health with other people whom they are familiar with and these people are most likely from the same socioeconomic group. If this is the case, then there may be a discrepancy between the subjective health ratings of people from various income levels, but not for their objective health ratings.

As stated above, there are numerous ways of measuring health. Liang (1986) conducted a recent study on the various aspects of elderly people's self-reported physical health using a number of health indicators that measured both subjective and objective health. His findings suggested that there are various components to this single variable. Subjective health is usually measured with a question dealing with how healthy the subjects rate themselves on a particular scale (e.g., very good to poor). However, there appear to be other components that this one question does not address (Liang 1986). One component that is of interest in the present study is comparative health or how healthy the subjects rate themselves compared to other people their own age. Using the example from above, people with lower income levels may rate themselves as being in good health on the standard subjective health question, but when asked how their health compares with others they may rate themselves as below average. The disparity between the objective health measure and the subjective health measure could be explained by the fact that subjects feel themselves

to be in relatively good health in comparison with their past health, but when comparing their health with others they give themselves a poorer health rating.

As with subjective health, there are a number of ways to measure objective health. However, some purported measures of objective health still have a subjective component. Usui et al. (1983) used an impairment index, where the subjects reported if they had any difficulties performing a number of functions (e.g., dressing oneself, going on walks outside), but if people have minimal difficulty doing some of these functions, they may not endorse them as such since they are still able to do them. Therefore, the objective measures that will be used in this study include the number of chronic health problems that a person endorses, the number of days spent in the hospital over the past year, and the number of medications that each subject is currently taking (Ferraro, 1985; Fillenbaum, 1979; Liang, 1986). These measures were selected because they are less likely to involve subjective judgments on the part of the subject.

Socio-economic Status/Education

Socio-economic status (SES) has been measured by self-reports of educational and financial attainment. Larson (1978) has shown that income and education were highly correlated with life satisfaction. Similar results have been reported by other investigators (Conner, Powers & Bultena, 1979; Doyle & Forehand, 1984). George, Okun, and

Landerman (1985) investigated age differences in life satisfaction and found that income was more important for life satisfaction in middle-aged and older adults than for young adults. Therefore, it seems that income may be an important factor when studying life satisfaction in the elderly. The most common measures of SES have been education and income, thus for the present study SES will be represented by two separate variables.

Financial Satisfaction

Financial satisfaction has been operationally defined as how satisfied individuals are with their income and whether or not it meets their needs (Liang et al., 1980). This variable consistently has been shown to have a positive impact on life satisfaction, even when income, occupation, and health were controlled (Alson & Dudley, 1973; Thompson & Streib, 1958). Liang and Fairchild (1979) also found that socio-economic status and financial satisfaction were positively correlated.

Objective Social Integration

Objective integration has been defined and measured as the amount of interpersonal interaction, organizational participation, and volunteer work a person includes in his/her daily schedule. A number of studies have shown that organizational participation or membership is related to life satisfaction (Burgess, 1954; Havighurst & Albrecht, 1953; Philbald & McNamara, 1965). A positive effect of social activity on life satisfaction has also been reported

(Haven, 1968; Lawton, 1972; Maddox, 1963; Markedes & Martin, 1979; Palmore & Luikart, 1972). Other researchers, however, have found no relationship between social activity and life satisfaction (Conner et al., 1979; Cutler, 1973). This discrepancy may be due to the use of purely objective measures of social integration (Kaplan, 1975; Liang et al., 1980).

Subjective Social Integration

Liang et al. (1980) operationally defined subjective integration as a person's feelings of loneliness and of being isolated from or integrated with family and/or friends. Many studies have not included a subjective measure of social integration. Research on social support networks, however, has recently included measures of affective support (Israel, Hogue, & Gorton, 1984; Cohen, Teresi, & Holmes, 1985). It has been shown that feelings of intimacy, caring, loving, etc., are more important than the amount of social interaction when investigating psychological well-being (Israel et al., 1984). Therefore, how well integrated the elderly believe themselves to be with their families and friends is probably an important factor when investigating life satisfaction.

Socio-cognitive Skills

Life satisfaction research has overlooked the potential importance of socio-cognitive skills or social competence. Norris and Rubin (1984) conceptualized social competence as having two components: breadth of behavioral repertoire and

sensitivity to situational cues. Consequently, a person who is socially competent should possess a number of different behaviors to select from and also the ability to determine which behavior would be appropriate in their current social situation. For example, if people want objects that others have, they can grab, ask, command, or bribe to reach their goals; but must also decide what behaviors would be relevant in that particular context. In order to evaluate social situations, a person should be able to recognize and consider such contextual factors as the age, sex, and psychological status (e.g., the thoughts, feelings, and cognitive competencies) of the social target (Norris & Rubin, 1984).

Past researchers have suggested that older adults have sophisticated strategies for understanding their social world (Norris, 1979; Norris & Pratt, 1980). Norris (1979) found that elderly adults perceived significant others in more complex and differentiated terms than did young adults. In another study, Norris and Pratt (1980) found that well-educated older adults did better than younger and middle-aged individuals at determining the intentions of characters in stories that had limited amounts of information. Hence, there may be a developmental trend such that elderly individuals may attain a higher level of socio-cognitive skills than younger adults. In fact, Sinnott (1978) proposed that the elderly acquire more advanced social inferential perspective-taking abilities, which allow them

to communicate on several contradictory levels within any relationship. On the other hand, it is difficult to determine whether these previous findings are due to age or educational attainment. Furthermore, other researchers have found evidence that socio-cognitive skills may be more closely linked to individual differences. Dolen and Bearison (1982) reported that amount of social interaction, particularly role participation, was a stronger predictor of socio-cognitive skills than age. It also has been shown that when individuals experience a decrease in familiar peer interaction it leads to increases in the production of egocentric speech during interaction, which is, in turn associated with lower socio-cognitive skills (Looft, 1972). It is possible that people who lack peer interaction and/or disengage themselves from the social community decline both in their social repertoire and sensitivity to the social environment (Norris & Rubin, 1984). While socio-cognitive skills may be important in life satisfaction, it is unclear whether they are a function of developmental trends or individual differences.

Hultsch and Plemons (1979) found that social competence was important in the adjustment to critical life events. Life events are periods of change, such as retirement and widowhood, when a person may have to reorganize their social environment to cope with these changes. Spence (1975) reports further support to the importance of flexibility in behavioral repertoire when coping with life events. He

found that elderly individuals adapt more quickly to novel situations if they are able to reinterpret changing social situations. Consequently, it appears that if individuals possess the skills to adjust to new situations as they encounter life events they should be more satisfied with their lives. Therefore, socio-cognitive skills may affect life satisfaction, in that, if a person's skills are inadequate it is possible that he or she will be socially isolated and consequently less satisfied with life.

As previously mentioned, Norris and Rubin (1984) subdivide social competence into two separate components, breadth of behavioral repertoire and sensitivity to situational cues. Hence, this study will include two measures of socio-cognitive skills that address these elements.

Perceived Socio-cognitive Skills

As noted earlier, subjective measures are at least as important and may be more important than objective measures in predicting life satisfaction. Self-perceived socio-cognitive abilities may be an intervening variable between actual socio-cognitive skills and life satisfaction, in the same way that subjective integration mediates between objective integration and life satisfaction. If individuals perceive themselves as socially incompetent and/or believe that others see them as incompetent, they may view themselves as isolated from their family and friends (Norris & Rubin, 1984), a situation associated with lower levels of

life satisfaction.

Modification of Liang et al.'s Model

This investigation will include each of the factors examined by Liang et al. (1980), but because some of these variables are quite complex and have probably been oversimplified, they will be expanded to include other distinct factors. Health and objective integration are two complex factors that have not been throughly investigated. Health can be divided into objective and subjective dimensions by using a variety of measures (Liang, 1986). Furthermore, both have been found to affect life satisfaction. If the relationship between financial satisfaction and health obtained in Liang et al.'s (1980) is actually between objective health and financial satisfaction, it could be argued that people who have had to spend a lot of money on medical services would be less satisfied with their financial situation. Fillenbaum (1979) found that self-reported health is related to objective measures of health in noninstitutionalized elderly. Therefore, perceived health should be influenced by objective health, but perceived health may mediate between objective health and life satisfaction.

Objective integration previously has been measured in research on social cognition (Dolen & Bearison, 1982) by using measures of role participation and interpersonal interaction. In Liang et al.'s model, objective integration was found to be affected by health, financial satisfaction

and SES. However, when this factor is subdivided these expanded variables will probably not be affected in the same way as previously found. For example, financial satisfaction may be related to role participation, but not to interpersonal interaction. Therefore, these additional variables should clarify existing relationships that were not apparent in the prior research on life satisfaction.

Hypotheses

Based upon the theory and research discussed above, the following hypotheses were posited:

1. As shown in Figure 2, it was hypothesized that perceived health (includes both the subjective and comparative health measures), subjective integration, perceived socio-cognitive skill and financial satisfaction would account for the most variability in life satisfaction. All the correlations between these variables and life satisfaction were expected to be positive.

Insert Figure 2 about here

Recent research has found evidence that many of the variables that affect life satisfaction are subjective in nature and that these variables may be more important than the purely objective measures used in the past. Liang et al. (1980) found that subjective integration, financial satisfaction and self-reported health were the strongest predictors of life satisfaction, all of which are

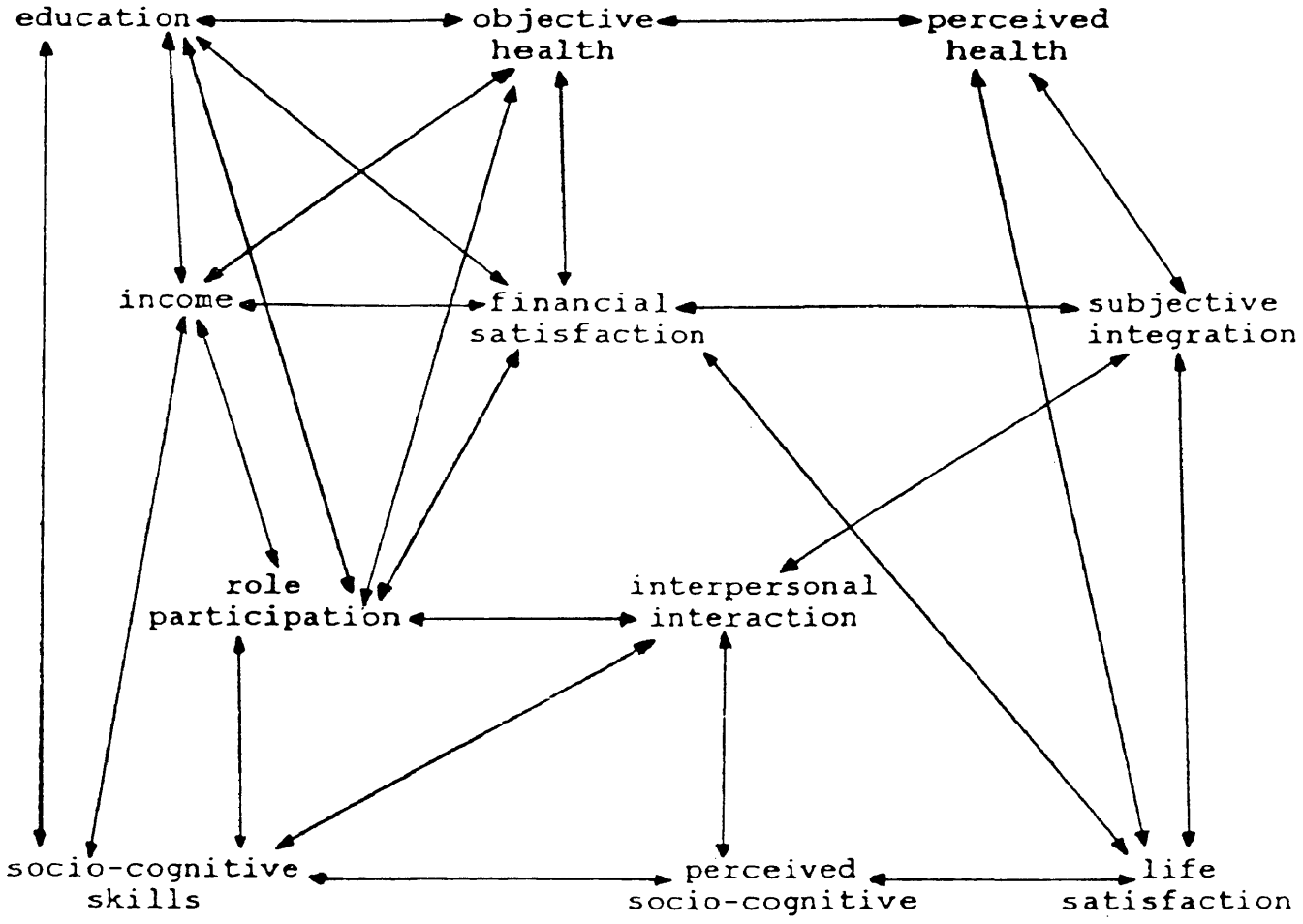

Figure 2. Predicted relationships between all the variables used in this study.

subjective measures. There has not been any research conducted on how socio-cognitive skills may affect life satisfaction, but given the past results, it seems likely that perceived socio-cognitive skill will more strongly predict life satisfaction than the objective measures of socio-cognitive skills.

2. Both subjective and comparative health were expected to be correlated with the objective health measures and subjective integration, as well as with each other. The correlations for both of the perceived health measures and all the objective health measures were predicted to be negative. Previous research has shown that self-reported health is correlated with objective measures of health (Fillenbaum, 1979). Positive correlations were expected between subjective integration and the perceived health measures. Liang et al. (1980) also found that their measures of health were related to subjective integration.

3. The objective health measures were hypothesized to be negatively correlated with financial satisfaction, education, income and role participation, in addition to the already mentioned positive relationships with the two perceived health variables. As mentioned, objective and perceived health have previously been found to be related (Fillenbaum, 1979). Socioeconomic status has also been found to be related to objective health; elderly with higher incomes have a lower frequency of physical disabilities than people of lower SES (Dovenmuehle, Busse, & Newman, 1961).

Medley (1976) also found that health had a direct impact on financial satisfaction. Role participation should be related to objective health, in that people who are physically ill curtail their participation in organizations and worksettings (Trela & Simmons, 1961).

4. Financial satisfaction is expected to be positively related to role participation, subjective integration, education and income, as well as with life satisfaction. Role participation should be related to financial satisfaction, in that important role losses, such as retirement, have been shown to raise anxiety about financial issues. The other four variables have been found to be related to financial satisfaction by Liang and Fairchild (1979) and Liang et al. (1980).

5. Subjective integration also should be positively related to interpersonal interaction, as well as perceived health, financial satisfaction and life satisfaction. Liang et al. (1980) found that subjective integration was affected by health, financial satisfaction, and objective integration. Subjective integration is defined as whether people feel lonely and isolated or integrated with family and friends. Therefore, this variable is more likely to be related to interpersonal interaction than role participation.

6. Perceived socio-cognitive skill should not only be related to life satisfaction, but to both measures of socio-cognitive skills and interpersonal interaction as well. The

correlations were all expected to be positive. As stated above, evidence has been found that subjective perceptions may be more important than a person's objective circumstances. There has not been any research on how perceived socio-cognitive skill is related to actual socio-cognitive abilities, but an action-oriented perspective (Brandtstadter, 1984) would predict that these two variables would be related. It has also been proposed that perceived sociocognitive skills and interpersonal interaction are related (Norris & Rubin, 1984).

7. Both measures of the socio-cognitive skills should be positively correlated with education, role participation, interpersonal interaction, in addition to perceived socio-cognitive skill. It was proposed that socio-cognitive skills may be related to educational attainment (Norris & Pratt, 1980). It has been suggested by Norris and Rubin (1984) that socio-cognitive skills are related to interpersonal interaction. Dolen and Bearison (1982) also found that social interaction, especially role participation, was related to socio-cognitive skills.

8. Education and income were also expected to have a positive relationship with role participation, as well as their relationship to other variables already discussed. People of lower SES have been found to participate less in organizations (Hyman & Wright, 1971; Tissue, 1971).

Method

Subjects

Sixty elderly volunteers (43 women and 17 men) were recruited from retirement communities, senior centers, and organizations in Southeastern Virginia. They were between the ages of 60 and 84 (M = 67.80 years, SD = 5.96). Thirty-seven of the subjects had completed high school and had taken some college courses. Furthermore, 45% of the subjects reported an yearly income between $15,000 - $35,000.

Materials

Two booklets were constructed that consisted of two socio-cognitive tasks that measured socio-cognitive skills and a questionnaire that contained questions and checklists for measuring all the other variables. Each of these measures are described below under the appropriate headings. The two booklets are reproduced in Appendices A and B.

Education. The level of educational attainment was gauged on a ten-point scale ranging from the elementary school level to obtaining a Doctorate in Medicine.

Income. This variable was measured on an index that included six divisions with the lowest category being below $5,000 and the highest category over $45,000.

Financial satisfaction. The checklist designed by Liang and Warfel (1983) was used to assess the subjects' perceptions of their income adequacy in four need areas: (1) Daily needs, (2) Medical expenses, (3) Unexpected

expenses, and (4) Leisure activity expenses. The subjects were required to check each of the above needs that they thought were adequately met by their income.

Number of health problems. A list of 36 chronic health problems was developed based on the Eight Revision, International Classification of Diseases, that was used by Ferraro (1985). The checklist included a wide range of health problems such as allergies, arthritis, cancer, high-blood pressure, stomach ulcer, etc.

Number of hospital days. This measure was adapted from Liang's (1986) use of the number of sick days. It was measured by one question asking the subjects whether they had spent any time in the hospital over the last year and if they had, how long was their stay was. The length of stay was calculated by total number of days in the hospital.

Number of medications. This measure consisted of a list of the medications that the subjects reported that they were currently taking (Fillenbaum, 1979). It was calculated by using the the number of medications listed by each subject.

Subjective health. Subjective health was assessed by asking the subjects to rate their health over the past year on a 5-point scale ranging from excellent to poor. This rating scale has been used by a number of other researchers (Fillenbaum, 1979; Israel, Hogue & Gorton, 1984; Liang, 1986; Liang & Warfel, 1983).

Comparative health. This item was measured with one

question that asked the subjects how healthy they were compared to others their own age on a 3-point scale (better, about the same, and worse). This measure was used by Israel, Hogue & Gorton (1984).

Role participation. A role participation score for each subject was obtained by summing the total number of roles checked from a list of ten mutually exclusive social roles that were discussed by Havighurst (1965).

Interpersonal interaction. The measurement for this variable was based on using the four social categories noted in the Connor et al. (1979) study. However, the social categories were too broad for the purposes of this study, therefore, they were subdivided into the following relationship categories: (1) Spouse, (2) Child, (3) Grandchild, (4) Sibling, (5) Other relative, (6) Acquaintance, and (7) Intimate Friend. The subjects listed, individually, the people whom they felt were important social contacts in these relationship categories. Scores for this variable were obtained by counting how many people each subject listed.

Perceived socio-cognitive skill. An index of perceived socio-cognitive skill was devised using seven questions from the Communication Competence Self-report Questionnaire (Rubin, 1985). Rubin's questionnaire consisted of 19 question concerning the subjects' perceptions of their communication skills. It was developed for use with student populations, thus, such questions that asked questions about

talking in front of the class and speaking to the professor were not included in this study. Only questions that could be applied to an elderly population were used, such as whether or not they become confused during conversations. The questions were answered on a five-point scale ranging from always to never. Each subject's score was computed by summing the across ratings for all seven questions.

Subjective integration. An index for social integration was created using six questions taken from a study conducted by Lawton, Kleban and diCarlo (1984). These questions assessed how integrated the subjects felt they were with their friends and family. They were scored on a five-point scale (always to never) and the subjects' scores consisted of the total of all the questions.

Life satisfaction. This variable was measured using the Life Satisfaction Index A developed by Neugarten et al. (1961). This instrument consists of 20 true-false items which were designed to measure a person's satisfaction with the past, the present, and optimism towards the future. The items used contained both positive and negative statements. Therefore, if the subject agreed with a positive statement it was scored as 1 and if the subject agreed with a negative statement it was scored as zero. The scores were then summed.

Person perception. This socio-cognitive task was designed by Peevers and Secord (1973) to assess people's ability to recognize and consider contextual cues. The

actual task used in this study was a revised version from another study conducted by Dolen and Bearison (1982). This task required the subjects to select two individuals whom they know well and to describe what kind of person each is. These two individuals were not to be from the subjects' families. Each subject's descriptions were divided into discrete pieces of information. The subjects' statements were then coded according to the following categories:

(1) "Undifferentiating" - the person is described in terms of his or her social situation or possessions.

(2) "Simple differentiating" - the person is differentiated as an individual, but only in terms of his or her relationship to the subject or superficial characteristic such as appearance, role category and global dispositions

(3) "Differentiating" - the person is described by fairly specific personal characteristics, which include interest abilities and beliefs.

(4) "Dispositional" - the description makes reference to the person's thoughts and feelings or traits which would have implications for his or her behavior in a number of situations.

For each subject the total number of statements was computed. A Person Perception Score was calculated from the proportion of the subject's total number of differentiating and dispositional statements divided by the total number of all statements (Dolen and Bearison, 1982).

Two raters scored 20 (1/3) of the protocols and the

inter-rater agreement was 94%. Therefore, one rater scored all sixty of the protocols and the scores obtained from this rater were used in the analyses.

Means-end problem-solving (MEPS). This socio-cognitive task was developed by Platt and Spivak (1975) to measure a person's ability to develop means to meet a particular goal. This task required the subjects to read two stories which simulated real-life problems. Each story presented a person with a particular need at the beginning and at the end of the story the need had been satisfied by the person. The two stories used in this study are in Appendix A. Subjects had to fill in the events which might have occured between the development of the need and its satisfaction.

The stories were scored according to the following categories:

(1) Relevant means - any relevant unit of information or instrumental act intended to reach the end goal.

(2) Enumeration of means - any additional details of particular means that are given.

Each subject acquired a total score which consisted of the sum of the relevant means and enumeration of means for the two stories. This procedure was also used by Dolen and Bearison (1982).

Two raters scored 20 (1/3) of the protocols to obtain a check on inter-rater reliability. It was found to be 80%, thus, all the scores used in the analyses were obtained from one rater who scored all sixty protocols.

Procedure

The subjects were first asked to read and sign the consent form, which is shown in Appendix C. Then the materials for the socio-cognitive tasks, and the questionnaire were distributed to the subjects. The subjects were told that the first task involved thinking about two people whom they know well, but are not members of their family. They were instructed to write a brief description of what each person was like on the pages provided. After the instructions were explained, any questions the subjects had about the procedure were answered and they were then told to begin the task. The subjects were given as much time as they needed to complete the task. Approximately 25 subjects were allowed to take the research materials home to complete them when they had more time. A full account of the take-home and group instructions appear in Appendices D and E.

After the subjects finished the first task, the investigator told them that the second task involved reading two short stories, but that the stories only had a beginning and an end. It was explained to the subjects that the beginning of the story would tell them about a person that had a particular goal he or she wanted to accomplish and at the end of the story the goal had been attained. The subjects were told that their task would be to fill in the events that might have occured between the beginning and the end of the story. The experimenter answered any questions

that were asked and then read the first story a loud, while the subjects read along from their copy. The stories used in this investigation are shown in Appendix D along with the Social Task Booklet. They were again given as much time as they needed to complete the task. The same procedure was followed for the second story.

After the socio-cognitive tasks were completed, the subjects filled out the questionnaire, which was self-explanatory (see Appendix B). The experimenter answered any questions raised by the subjects while they completed the questionnaire. After all the subjects were finished and the questionnaires were turned in, the purpose of the study was explained and the subjects were thanked for their participation.

Results

A stepwise multiple regression was used to assess which variables best predicted life satisfaction, as measured by the LSIA. The predictor variables used were education, income, financial satisfaction, number of social contacts, subjective social integration, number of health problems, number of days spent in the hospital, number of medications, subjective and comparative health, person perception scores, means-end problem-solving scores, perceived socio-cognitive scores, and role participation.

The criteria used for controlling the inclusion of variables into the final regression equation were set at 0.05 (inclusion) and 0.9 (exclusion). Two variables, person perception and subjective integration, were found to be significant predictors of the subject's level of life satisfaction. These accounted for 50.5% of the total variability in the life satisfaction scores. The zero-order correlations, usefulness index, and tests of significance for these two predictors can be found in Table 1.

Insert Table 1 about here

The person perception score was the best predictor of life satisfaction. This variable accounted for 41.7% of the variance indicating that the higher the subject's person perception score, the higher his or her level of life satisfaction. The second predictor, subjective integration

Table 1

Summary of Multiple Regression Analysis Predicting Life Satisfaction

Predictor variable	Correlation with criterion	Usefulness index	Unstandardized *b*	Standard error of b	*t* for = 0
Person perception	.646	.417	8.60	1.73	4.95***
Social integration	.540	.081	.31	.10	3.18**

R = .505, *F* (2, 57) = 29.08, *p* < .001.

***p* < .001, **p* < .01.

accounted for 8.1% of unique variance in life satisfaction. The higher the subjects' score on the subjective integration scale, the more satisfied they were with their lives.

Zero-order correlations were also computed on all the variables and are presented in Table 2.

Insert Table 2 about here

As shown in Table 2, all the variables were significantly correlated with life satisfaction and they were all in the expected positive and negative directions. Although, this was not predicted, it is not surprising since these variables were selected on the basis of past research that has indicated that each was related to life satisfaction.

Partial correlations were also computed between all of the variables. The correlation between life satisfaction and perceived socio-cognitive skill was no longer significant after controlling for objective socio-cognitive skills (r (57) = .21, p > .10). The only other spurious correlations were the relationships between the perceived health variables and interpersonal interaction, which are discussed below.

The predicted relationships in the first hypothesis, that is that life satisfaction would be correlated with subjective integration, subjective and comparative health, financial satisfaction, and perceived socio-cognitive skill were all supported, as can be seen in Table 2. These

Table 2

Correlation Matrix for all the Variables Used in this Study

	Life Satisfaction	Education	Income	Financial Satisfaction	Social Contacts	Health Problems	Hospital Days	Medications	Subjective Health
Life Satisfaction	1.00	.21*	.30**	.51***	.31**	-.42***	-.32***	-.30**	.42***
Education		1.00	.37**	.27*	.44***	-.04	-.14	.34**	.45***
Income			1.00	.48***	.41***	-.14	-.02	-.08	.19
Financial Satisfaction				1.00	.47***	-.25*	-.20	-.34**	.49***
Social Contacts					1.00	-.03	-.21	-.03	.29*
Health Problems						1.00	.27*	.57***	-.47**
Hospital Days							1.00	.43***	-.38***
Medications								1.00	-.29*
Subjective Health									1.00
Comparative Health									
Person Perception									
Means-End Problem-Solving									
Perceived Socio-cognition									
Subjective Integration									
Role Participation									

***p < .001, **p < .01, *p < .05.

Table 2 (continued)

	Comparative Health	Person Perception	Means-End Problem-Solving	Perceived Socio-cognition	Subjective Integration	Role Participation
Life Satisfaction	.43***	.65***	.50***	.40***	.54***	.31**
Education	.32**	.29	.34**	.48***	.17	-.03
Income	.06	.26*	.33**	.38***	.33**	.28*
Financial Satisfaction	.43***	.51***	.41***	.57***	.50***	.47***
Social Contacts	.26*	.27*	.40***	.37**	.43***	.14
Health Problems	-.29*	-.51***	.01	-.37**	-.28*	-.21
Hospital Days	-.45***	-.16	-.27*	-.25*	-.31*	-.05
Medications	-.31**	-.25*	-.03	-.22*	-.37**	-.18
Subjective Health	.81***	.44***	.33**	.66***	.27*	.23*
Comparative Health	1.00	.38***	.29*	.56***	.22*	.14
Person Perception		1.00	.46***	.54***	.42***	.18
Means-End Problem-Solving			1.00	.28*	.40***	.09
Perceived Socio-cognition				1.00	.40***	.36**
Subjective Integration					1.00	.28*
Role Participation						1.00

***$p < .001$, **$p < .01$, *$p < .05$.

relationships produced some of the highest correlations, ranging from .42 to .54. However, the highest correlation of all variables was between life satisfaction and person perception (r (58) = .65, p < .001). Means-end problem-solving was also highly correlated with life satisfaction (r (58) = .50, p < .001). These two correlations were not predicted in the hypotheses.

All of the variables that were predicted in the second hypothesis to be related to subjective health and comparative health were significantly related and in the expected direction (see Table 2). Of particular interest was the correlation between subjective health and number of health problems (r (58) = -.47, p < .001), which indicated that the more chronic health problems a subject had, the lower his or her perceived rating of health. Another noteworthy relationship was the correlation between comparative health and number of hospital days (r (58) = -.45, p < .001). Thus subjects' rating of how healthy they were compared to others their own age was lower when they had spent more time in the hospital over the last year.

The correlations between subjective integration and the two perceived health variables were the lowest of all correlations, even though they were significant at the 0.05 level (see Table 2). The perceived health variables were also correlated with several variables that were not predicted. These variables were interpersonal interaction, financial satisfaction and education (see Table 2 for

correlations and probability levels). As noted above, the relationships between the perceived health variables and interpersonal interaction were spurious, because when controlling for the effects of subjective integration these correlations were no longer significant. Although correlations between financial satisfaction, education, and perceived health measures have been reported in the past, it was predicted that these correlations would be significant for the objective but not subjective measures of health, as discussed in the third hypothesis. It appears that objective health variables did not account for these previous findings. Of the predicted relationships between the various objective health measures and education, income, financial satisfaction, and role participation, only two of the correlations between financial satisfaction and the objective health variables (number of health problems $\underline{r}$ (58) = -.25, $\underline{p} < .05$, and number of medications $\underline{r}$ (58) = -.34, $\underline{p} < .01$) were significant and these were lower than the perceived health correlations. Moreover, education was significantly correlated with only one of the objective measures, number of medications ($\underline{r}$ (58) = .34, $\underline{p} < .01$). Thus, the higher the subjects' educational attainment the more medications they were currently taking.

As predicted in hypothesis four, financial satisfaction was correlated with role participation ($\underline{r}$ (58) = .48, $\underline{p} < .001$), and subjective integration ($\underline{r}$ (58) = .50, $\underline{p} < .001$). Thus, the subjects tended to report more satisfaction with

their financial situation if they felt integrated with their families and friends, and if they reported participating in a higher number of roles. In addition, financial satisfaction was correlated with income (r (58) = .48, p < .001) and education (r (58) = .27, p < .05, which indicated that the higher the subjects' income and educational attainment the more satisfied they were with their financial situation.

The prediction made in hypothesis five, that subjective integration also would be related to interpersonal interaction, was supported (r (58) = .43, p < .001). people who feel integrated with their friends and family members tended to report engaging in more social interaction.

As for the sixth hypothesis, some supporting results were found. Perceived socio-cognitive skill was correlated with interpersonal interaction (r (58) = .37, p < .01), and with person perception (r (58) = .54, p < .001), but was not as highly correlated with means-end problem-solving (r (58) = .28, p < .05). Perceived socio-cognitive skill was also related to quite a few other variables that were not predicted in the hypothesis. These included education, income, financial satisfaction, subjective and comparative health, subjective integration, role participation and all of the objective health measures. See Table 2 for the correlations and probability levels.

Contrary to the prediction made in hypothesis seven, the two socio-cognitive skills were not related to role

participation. However, both measures were correlated with education, (r (58) = .34, p < .01, r (58) = .29, p < .05, for means-end problem-solving and person perception, respectively). Thus, the more educated the subject, the better he or she did on these tasks. Both of the socio-cognitive tasks were also related to interpersonal interaction; the correlation with means-end problem-solving was (r (58) = .40 p < .001), and the correlation for person perception was (r (58) = .27, p < .05).

One prediction made in the final hypothesis, that role participation would be related to education was not significant. However, the other prediction, that role participation would be correlated with income was supported (r (58) = .28, p < .05). Thus, subjects with higher incomes tended to report participation in more roles.

Discussion

The results of this study indicate that subjective integration and person perception were the only variables that significantly predicted the level of life satisfaction reported by the elderly. Subjective integration was more highly correlated with life satisfaction than objective integration (interpersonal interaction and role participation) and accounted for a significant portion of the variance in life satisfaction. This relationship remained invariant even when other variables such as education, income, financial satisfaction, subjective health, and number of chronic health problems were controlled. Consequently, it seems that subjective integration may be more closely related to how satisfied the subjects are with their lives than objective integration. This is consistent with Liang et al.'s (1980) finding that objective integration was only indirectly related to life satisfaction. As noted by Liang et al. (1980) these relationships indicate that people's subjective impressions play an important role in how they view their world.

Subjective integration represents the subjects' impressions of how satisfying their interpersonal relationships are to them. The questions that were used to measure this variable in the present study took into account such things as, how lonely the subjects rated themselves, whether they felt like they see enough of their friends and families and if the subjects were satisfied with these

intimate relationships. Thus, if the subjects report getting along well with the people they are closest to, then they seem to be more satisfied with their lives. If this is indeed the case then it may be an important factor to consider when attempting to help the elderly become more satisfied with their lives. It is imperative to investigate the elderly's perceptions of their intimate relationships in order to ascertain whether they are experiencing any interpersonal conflicts or feel that their intimate relationships are unfulfilling.

The variable that best predicted life satisfaction was person perception, a relationship that was not predicted. This finding is more difficult to explain, in part because this is the first study to investigate socio-cognitive skills and their possible relationship to life satisfaction. It appears that the subjects who gave very distinguishing descriptions of people, were also more satisfied with their lives than subjects who did not. Moreover, person perception was used to measure the subjects' sensitivity to contextual cues, such as the personality traits of people they have contact with. The subjects who received higher scores used descriptive statements consisting of information about the chosen individual's characteristics that were very distinctive and idiosyncratic. Thus, if the person perception scores indicate the subjects' ability to infer situational factors, then subjects who possess greater skill at interpreting contextual cues report being more satisfied

with their lives than do subjects who did not possess a high level of these skills. In the event that subjects who possess a greater sensitivity to contextual cues use these skills to interpret social situations, then they should be able to adjust to the social changes that occur in their lives as they grow older. This finding seems related to Spence's (1975) proposal that the elderly are better able to adapt to changes in their lives (e.g., retirement or death of a spouse) if they have the ability to interpret novel social situations. These situations would require the elderly to correctly interpret and process any contextual cues that are available in order to interact successfully in these novel social situations. This finding may also be related to subjective integration. If the elderly are more aware of other people's individual personality traits and are sensitive to contextual cues in novel interpersonal situations then it would not be surprising that they would be more satisfied with their interpersonal relationships because they are better able to deal with many of the conflicts that these relationships might present.

Although none of the other variables used in this investigation were found to be predictors of life satisfaction, they were all significantly correlated with life satisfaction. With the exception of the two measures of socio-cognitive skills, all these relationships have been observed by previous researchers. The correlations for the two components of perceived health support the previous

findings that subjective health is related to life satisfaction (Adams, 1971; Granick, 1973; Jeffers & Nichols, 1961; Liang et al. 1980; Palmore & Kivett, 1977). The correlation between all of the objective health variables and life satisfaction provides further evidence for Liang et al.'s (1980) finding that health directly affects life satisfaction. Thus, it appears that the subjective health measures (how healthy elderly adults perceive themselves to be) and the objective health measures (number of chronic health problems, number of days spent in the hospital over the past year, and number of medications) both influence the elderly's reported level of life satisfaction.

The correlations between life satisfaction, financial satisfaction, income, and education are consistent with previous studies that have found a relationship between life satisfaction and SES (Connor, Powers & Bultena, 1979; Doyle & Forehand, 1984; George, Okun & Landerman, 1985; Larson, 1978). However, the fact that the correlation between financial satisfaction and life satisfaction was higher than those between income, education and life satisfaction confirms that SES has a relatively minor effect on life satisfaction (Liang et al. 1980; Alson & Dudley, 1973). Consequently, it appears that it is more important for the elderly to be satisfied with their income than the actual amount of money they receive.

Finally, as predicted, perceived socio-cognitive skill was related to life satisfaction. This finding is not

surprising from an action-oriented approach (Brandtstadter, 1984). People who perceive themselves as being able to deal with others in a socially competent way are expected to view their lives in an optimistic light. If people who are not satisfied with their lives begin viewing themselves as more socially competent then they may also increase their level of life satisfaction.

Life satisfaction was also related to variables that were not predicted in the hypotheses. These relationships included education, income, the objective health variables, interpersonal interaction, role participation, and means-end problem-solving. Education and income have been discussed above. The distinction made in this study between the subjective and objective health measures has been investigated by Liang (1986), but this distinction, and how it relates to life satisfaction, is not well understood. It was predicted that the objective measures would not be directly related to life satisfaction when also using subjective measures of health. However, all three of the objective health variables were significantly correlated with life satisfaction, which supports the previous findings of studies that have used objective health measures (Liang & Warfel, 1983; Usui, Keil & Phillips, 1983). The highest correlation between these variables and life satisfaction was the number of reported health problems. Thus, it appears that the more chronic health problems people have the lower their level of reported life satisfaction.

Furthermore, the correlations for the perceived health variables were just as highly correlated with life satisfaction. Therefore, it appears that these three variables (number of reported health problems and the two perceived health variables) are related to life satisfaction to about the same degree. This makes sense considering that people most likely rate their subjective health based on the number of health problems that they are currently experiencing. If the elderly are suffering from a number of chronic health problems, they will also rate themselves lower on perceived health measures and consequently report a lower level of life satisfaction. This is probably due to the fact that many chronic health problems require people to change their life style and may restrict them from doing things that they were able to do before incurring the health problem. Consequently, this might make them less satisfied with the life style that they are required to lead.

The measures of objective integration (interpersonal interaction and role participation) were also found to be related to reported life satisfaction. It was proposed that interpersonal interaction and role participation would be related to each other, but only have an indirect relationship to life satisfaction. However, these unpredicted correlations give support to the notion that the more socially active subjects report themselves to be, the greater their reported life satisfaction, which has been found by other researchers (Burgess, 1954; Haven, 1968;

Havighurst & Albrecht, 1953; Lawton, 1972; Markedes & Martin, 1979). Consequently, it appears that the number of reported roles the elderly engage in and how socially active they report themselves to be are related to how satisfied they are with their lives. This implies that, if the elderly remain socially active, then they will report a higher level of life satisfaction. Thus, it may be beneficial for the elderly to assume meaningful roles in their communities and to be more active in their social environment when trying to become more satisfied with their lives. These results also seem to confirm the activity theory of successful aging, which assumes that, for most elderly adults, decreases in social interaction are an undesirable aspect of the aging process. Havighurst (1968), however, found that the relationship between levels of activity and life satisfaction is influenced "by the extent to which the individual remains able to integrate emotional and rational elements of the personality." Personality measures were not included in the present study, thus, it is impossible to determine the role of personality type.

The final variable found to be related to life satisfaction was means-end problem-solving. Means-end problem-solving was defined in the present investigation as another objective measure of the subjects' socio-cognitive skills. It was proposed that perceived socio-cognitive skill would be directly related to life satisfaction, while means-end problem-solving would be indirectly related to

life satisfaction through its relationship with perceived socio-cognitive skill. It appears, however, that the higher a subject's ability to generate means to meet a particular goal, the higher his or her level of reported life satisfaction. A possible explanation for this relationship is that people who scored higher on the means-end problem-solving task may, in fact, be better at attaining their life goals and consequently they are more satisfied with their lives.

In hypothesis two it was proposed that the perceived health variables would be significantly related to all the objective health measures. This hypothesis was supported. The two perceived health variables were also highly correlated with each other, as predicted. The two highest correlations between perceived health and objective health measures were the relationship between subjective health and the number of chronic health problems, and the relationship between comparative health and number of hospital days. These two findings suggest that when the subjects were asked to rate their health, they thought more about how many health problems they were experiencing, but when asked to compare their health to others their own age, they may rely more on whether they have spent any time in the hospital over the last year. These results support Liang's (1986) proposal that there are a number of distinct components involved in self-reported physical health.

Support was also found for the additional prediction,

stated in hypothesis two, that both of the perceived health variables would be related to subjective integration. This correlation supports Liang et al.'s (1980) finding that subjective integration is directly affected by health. All three of the objective health variables were also related to subjective integration, even though these relationships were not predicted. Thus, it seems that all measures of health are related to how integrated the subjects feel they are with their friends and families. This implies that people may be less satisfied with their intimate relationships when they are suffering from chronic health problems. One possible explanation for this finding is that when the elderly start experiencing difficulties with their health, they become socially isolated. This may be related to having to change their life styles when they develop a chronic health problem, and as a consequence, they are required to curtail their social activities, which would cause them to become more socially isolated. An alternate explanation for this finding is that the elderly may first become socially isolated and, as a result, start experiencing a deterioraton in their health. This, of course is a causal relationship that was not addressed by this study.

It was expected, as stated in hypothesis three, that objective health would account for the previous finding that health is related to financial satisfaction and education. This was not the case. The relationships between the two

perceived health variables, education, and financial satisfaction were not predicted. The only two significant correlations between the objective measures and financial satisfaction were number of health problems and number of medications. The more chronic health problems a person reports and the more medications a person takes (probably as a consequence of the health problems), the lower the person's reported financial satisfaction. These correlations, however, were lower than the correlations between the perceived health variables and financial satisfaction. Therefore, perceived health is a better predictor of financial satisfaction than objective health.

Only one objective health variable, number of medications, was related to education. Thus, the prediction that the objective health variables would be related to education was only minimally supported. It is interesting to note, however, that the more educated the subjects, the more medications they reported using. The relationship between the objective health variables and income, predicted in hypothesis three, was not supported, in fact, none of the health variables, perceived or objective, were correlated with income. Consequently, it seems that subjective measures of health and their relationship to education account for the previous findings that health is related to SES (Liang et al., 1980; Liang & Warfel, 1983).

Other important relationships were also found between objective integration (role participation and interpersonal

interaction), and both the subjective and the objective health variables. As stated in hypothesis three, it was predicted that objective health variables would be related to role participation, a measure of objective integration, but none of the objective health variables were significantly correlated with this variable. Instead, one of the perceived health variables, subjective health, was correlated with role participation. Additionally, the objective health variables were not correlated with interpersonal interaction. Therefore, these results appear to indicate that Liang et al.'s (1980) finding that health was directly related to objective integration, is accounted for by the relationship between subjective health and the subjects reported role participation.

All the predictions stated in the fourth hypothesis concerning financial satisfaction were supported. Financial satisfaction was related to the two SES variables, education and income. This finding supports the previous findings that SES and financial satisfaction are directly related (Liang et al., 1980; Liang & Fairchild, 1979; Liang & Warfel, 1983). Thus, the higher the elderly's income and educational attainment, the more satisfied they are with their financial situation. Financial satisfaction was correlated with role participation, as predicted. An unpredicted finding was a positive relationship between financial satisfaction and interpersonal interaction. These relationships confirm the past research findings that

financial satisfaction is related to objective integration (Liang et al., 1980; Liang & Fairchild, 1979; Liang & Warfel, 1983). These results indicate that elderly adults who report a higher level of financial satisfaction, participate in a greater number of social roles and are involved with a greater number of interpersonal relationships than elderly adults who report being dissatisfied with their financial situation. Finally, subjective integration was found to be related to financial satisfaction, as reported by previous researchers (Liang et al., 1980; Liang & Warfel, 1983). The more satisfied the elderly reported being with their interpersonal relationships, the more satisfied they reported being with their financial situation. This suggests that the elderly who have a satifying social life are also satisfied with their financial situation.

Hypothesis five, that subjective integration would be related to interpersonal interaction but not to role participation, was confirmed. This finding suggests that the relationship found by Liang et al. (1980) between subjective integration and objective integration, is probably accounted for by the amount of social interaction the subjects report, rather than reported role participation. Thus, it appears that the more satisfiedthe elderly report being with their interpersonal relationships; the more relationships they have. The more social interaction the elderly report having the more satisfied

they are with their social situations. One implication of this result is that if the elderly have a number of interpersonal relationships (e.g., several friends whom they see occasionally) then they do not have to rely on just one or two of their friends for all of their social activities.

In hypothesis six perceived socio-cognitive skill was predicted to be related to both objective measures of socio-cognitive skills and interpersonal interaction. All of these predictions were supported. The correlation between perceived socio-cognitive skill and person perception, however, was higher than the correlation for means-end problem-solving. These findings are not surprising when looking at the questions used to measure perceived socio-cognitive skill. Most of them were related to how competent the subjects rated themselves when they were interacting with others. Consequently, if the subjects are better at distinguishing between persons on a person perception task, then they are more confident of their interpersonal skills and this ability in person perception does not seem to be closely related to their ability to develop means of reaching a particular goal.

Furthermore, perceived socio-cognitive skill was significantly correlated with all of the other variables used in this study. The perceived socio-cognitive skill index seems to be related to the same variables as life satisfaction. This finding suggests that life satisfaction and perceived socio-cognitive skill are closely associated,

even though these scales ask different types of questions. The life satisfaction scale has been defined as a multidimensional measure that attempts to represent psychological well-being. Neugarten et al. (1961) described a person that was at the positive end of psychological well-being as the following:

> (a) takes pleasure from whatever the round of activities that constitutes his everyday life; (b) regards his life as meaningful and accepts resolutely that which life has been; (c) feels he has succeeded in achieving his major goals; (d) holds a positive image of self; and (e) maintains happy and optimistic attitudes and mood. (Neugarten et al., 1961, p. 137).

The concept of psychological well-being, however, may be more complex and probably has many different components. Consequently, the perceived socio-cognitive skill index used in this investigation may have tapped another component of psychological well-being. Throughout their lives people have not much choice but to interact with others, be they friends, family, or other people they come in contact with during the day. Therefore, psychological well-being must be contingent at least in part on people's success or failure to deal effectively with others.

The seventh hypothesis stated that the two socio-cognitive skills would be correlated with education, role participation, and interpersonal interaction. The prediction for education was supported. Thus, it seems that

socio-cognitive skills may not be related to the maturational process as proposed by some researchers (Berndt, 1981; Ford, 1982; Peevers & Secord, 1973), but may be more closely related to educational attainment (Norris & Pratt, 1980). Contrary to predictions, neither of the socio-cognitive skills were related to role participation, thus Dolen and Bearison's (1982) findings were not supported by this investigation. Consequently, it appears that the educational experiences that elderly have had throughout their lives help to develop their socio-cognitive skills, but these skills are not dependent upon the number of social roles that they report.

Both measures of socio-cognitive skill were related to interpersonal interaction, which supports the previous findings that socially isolated individuals perform more poorly on socio-cognitive tasks, than individuals who report being socially active (Dolen & Bearison, 1982; Hollos & Cowan, 1973; Norris & Rubin, 1984; Rubin, 1982). Thus, it appears that people who report having a limited number of interpersonal relationships seem to have poor socio-cognitive skills. These findings, however, do not address whether they had poor socio-cognitive skills all their lives and thus have fewer interpersonal relationships or whether their socio-cognitive skills have diminished because they have become socially isolated.

Both socio-cognitive measures were significantly correlated with many of the same variables that were found

to be related to reported life satisfaction. Hence, it appears that level of life satisfaction and socio-cognitive skills have a lot in common. This relationship has not been investigated before, but it raises some interesting questions.

According to Tagiuri (1969) the socio-cognitive measures used for this investigation are related to cognitive complexity, in that conceptual differentiation between persons and generating means of attaining goals involves the use of cognitive organization. It has also been noted that people who possess greater cognitive complexity possess the following personal characteristics: "breadth of personal experience, self-insight, social skill and adjustment, and esthetic attitude" (Allport, 1961, p. 61). Furthermore, it has been found that people who have more differentiating abilities are able to recognize conflicting traits in individuals and organize them into a coherent whole. This seems have bearing on Sinnot's (1978) proposal that elderly individuals have the ability to communicate on several contradictory levels within any relationship, in that, if people with greater socio-cognitive skills acknowledge conflicting traits in other individuals, then they should be able to interact at discordant levels in their interpersonal relationships. Consequently, a possible explanation for the close association between socio-cognitive skills and life satisfaction is that socio-cognitive skills reflect the

elderly's subjective perceptions of their interpersonal environment and most likely colors their whole view of life.

The relationship between educational attainment and socio-cognitive skills may be explained by the assumption that the more new experiences and learning situations that people encounter the greater the increases in their cognitive complexity. This, in turn, would enable them to better understand and deal with their environment.

Finally, the predictions in hypothesis eight for role participation received mixed support. Role participation was correlated with income, thus the higher the subjects' income, the higher their reported role participation. However, the other prediction, that role participation would be related to education, was not supported. Therefore, the previous findings that SES was related to role participation (Hyman & Wright, 1971; Tissue, 1971), seem to be accounted for by the subjects' income status rather than their educational attainment.

In summary, the three objectives of this investigation were to study the distinctions between a number of subjective and objective variables, to subdivide several of the variables used by past researchers in an effort to study the complex relationships between them, and to expand Liang et al.'s (1980) model to include two new socio-cognitive variables. The distinctions made between the subjective and objective variables help to explain a number of past research findings. To reiterate, the past finding that

health and SES are related seems to be accounted for by the relationship between the subjective health measures and education, because none of the health variables were correlated with income. Another relationship clarified by this distinction is that the relationship between financial satisfaction and health found by other researchers is accounted for in the present study by the relationship between subjective health and financial satisfaction. Objective health measures were minimally related to financial satisfaction. Two of the objective health measures (number of health problems and number of medications) were correlated with financial satisfaction, but these correlations were lower than those found between the subjective measures and financial satisfaction. All of the health measures, however, were related to life satisfaction. Consequently, the distinction between subjective health and objective health helps to explain the relationships between self-report measures of health and the other variables used in this study. Finally, the role of subjective variables (subjective integration, financial satisfaction, perceived socio-cognitive skill, and the perceived health variables) and objective variables (education, income, role participation, interpersonal interaction, socio-cognitive skills and the objective health measures) in explaining life satisfaction are still somewhat unclear. The subjective variables were, for the most part, more highly correlated with life satisfaction. On the other

hand, both objective measures of socio-cognitive skill were also highly correlated with life satisfaction. Thus, it appears that the elderly's subjective impressions are important in determining their reported level of life satisfaction, but there are objective factors that are equally important.

The second objective, to subdivide two variables (SES and objective integration) into several distinct factors, also helps to explain some of the previous research findings. By dividing the objective integration variable into role participation and interpersonal interaction, it was found that subjective integration was related to interpersonal interaction, but not to role participation. Therefore, subjective integration can be said to be more closely related to the subjects' reported number of social contacts, than to the subjects' amount of role participation. Another finding associated with the second objective of this study, is that interpersonal interaction was indeed related to SES, that is education and income (Connor, Powers & Bultena, 1979; Doyle & Forehand, 1984; Larson, 1978), however, role participation was only related to income. Consequently, it seems that educational attainment is not important when considering active involvement in roles, at least for the cohorts used in this study.

The final objective, expanding Liang et al.'s (1980) model to include two new socio-cognitive variables, reveals

some interesting new ideas about life satisfaction and how these concepts might be related. All the measures of socio-cognitive skill (perceived as well as objective) were correlated with most of the variables used in this study, as was life satisfaction. Socio-cognitive skills are the abilities used to organize our thoughts about other people and understand their behavior. Consequently, these skills have an impact on our social behavior. Therefore, it is proposed that these skills are closely associated with life satisfaction because how satisfied people are with their lives seems to depend in part on how successful they are when interacting with other people.

In conclusion, several important implications can be drawn from these results, with regard to helping the elderly become more satisfied with their lives. First, the relationship between subjective integration and life satisfaction indicates that if people are feeling lonely or if they are experiencing difficulty in their close interpersonal relationships, then they would be less satisfied with their lives. Thus, this is an important factor to investigate when attempting to raise the elderly's level of life satisfaction. For example, when elderly adults express dissatisfaction with their lives they should be asked if they are experiencing any difficulties in their interpersonal relationships. If it is found that they are indeed lonely and/or dissatisfied with their interperonal relationships, it may be beneficial for the elderly to

receive interpersonal counseling in order to help them deal more effectively with these particular problems (Adler, 1927; Lazarus, 1981; Rogers, 1980). This, in turn, may help them feel more satisfied with their lives in general.

Second, the finding that socio-cognitive skills are closely related to life satisfaction suggests that it may be possible to improve the elderly's life satisfaction by increasing their socio-cognitive abilities. Higher educational attainment was found to be related to greater socio-cognitive skills. The educational experiences of the elderly that participated in this study were most likely very different from the experiences that students are currently receiving. Furthermore, the elderly that were able to continue their education may have had greater opportunities to participate in other activities, not related to their education, that helped to increase their socio-cognitive skills. Thus, it is difficult to identify the role of education in increasing socio-cognitive skills. Perhaps, by encouraging elderly adults to continue their education, it may be possible to increase their socio-cognitive skills. This may not require education in the formal sense, but new and varied experiences seem to be important for the continued development of socio-cognitive abilities and as a consequence, in how satisfied the elderly report being with their lives.

Third, it should be noted that health and financial considerations still appear to be important when considering

life satisfaction, but it may be that these factors have a subjective component that plays an influential role in how satisfied the elderly are with their lives. Consequently, it may be possible to alter their subjective perceptions through individual or group counseling sessions aimed at making them aware that how they think about their life circumstances has an important part in how they feel about their situation (Ellis, 1977; Manaster & Corsini, 1982).

Finally, although the findings of this study help to explain the relationships between life satisfaction and the other variables that affect it, these findings also raise some interesting research questions that require further investigation; How closely related are socio-cognitive skills and reported life satisfaction? Can socio-cognitve skills actually increase or is this a stable characteristic and if they can be increased will this also increase life satisfaction? Will interpersonal counseling actually help the elderly become more satisfied with their lives? These are just a few possible research questions. No doubt research on life satisfaction in later life and the factors that affect it will remain a viable area of interest for future investigation.

APPENDIX A

College of William and Mary

Psychology Department Consent Form

The general nature of this experiment on life satisfaction conducted by Gale R. Gray has been explained to me. I understand that I will be asked to do two tasks and complete a questionnaire. I further understand that my anonymity will be preserved and that my name will not be associated with my responses or any results of this study. I know that I may refuse to answer any question asked and that I may discontinue participation at any time. I am aware that I may report dissatisfactions with any aspect of this experiment to John Nezlek of the Psychology Department's Research Ethics Committee, at the College of William and Mary (253-4242). My signature below signifies my voluntary participation in this experiment.

_____ _____

Date Signature

APPENDIX B

Group Instructions

Hello. My name is Gale Gray. I'm a graduate student in psychology at the College of William and Mary. I am doing research on life satisfaction in the elderly. I need people to do two short tasks and fill out a questionnaire. The questionnaire asks questions about your background, health and social support. This study will take about 45 minutes. Are there any questions about what I would like you to do? Would you be willing to participate? (Hand out booklets and the consent forms). If so, please follow along as I read the consent form. (Read form out loud.) You just have to sign and date the form.

Now for the first task, I want you to think about two people you know well. Describe what kind of people they are. These two people should not be members of your family. Just write down any information that tells what each person is like. Use the first two pages in the booklet labeled "Person 1" and "Person 2". I will give you as long as you need to work on this, but when most everyone is finished I will tell you to stop. When we are finished with the other tasks, I will give you time to go back and complete the tasks you did not finish. Do you have any questions? O.K. you can begin, when you are finished just put down your pencil so I will know when you are done. (Wait till almost everyone is done.) O.K. we need to move on now.

For the next task I will read you a short story, but it only has a beginning and an end. I want you to complete the story by filling in the events that might have occured between them. Just write down what kinds of things might have happened between the beginning and end of the story. I will give you as much time as you need to do this just like the last task. When you finish, again, put down your pencil. Are there any questions? Turn to the page marked "Story 1" and follow along as I read aloud. (Read story)

Mr. A. was listening to people speak at a meeting about how to make things better in the neighborhood. He wanted to say something important and have a chance to be a leader too. The story ends with him being elected leader and presenting a speech. Please begin the story at the meeting where he wanted to have a chance to be a leader. Does everyone understand what I want you to do? Alright you can start now. (Most everyone is done.) O.K. we need to go on to the next task.

I want you to do the same thing for story 2. Turn to the next page and read along. (Read story.)

Mrs. P. had just moved in that day and did not know anyone. She wanted to have friends in the neighborhood. The story ends with her having many good friends and feeling at home in the neighborhood. Please begin the story with Mrs. P. in her room immediately after arriving in the neighborhood. You can start. (most everyone is done.) O.K. Let me just get the people that are done with all the

other tasks started on the questionnaire, and then the people that want to go back and finish any of the other tasks can do this before they go on.

The rest of the booklet is a questionnaire. Most of the questions are self-explanatory, but if you do not understand any of them just ask. There is one section where I ask you to list the people that you interact with. I only give you a couple of pages to do this. Some of you may need more pages. If you do, just raise your hand and I can give you more. When you are done you may leave quietly. I will meet with you outside the room to explain why I had you do these things and what I expect to find. I will also answer any questions you might have about the study. O.K. The people that need to finish something can go back now and when you are done with that go on and start the questionnaire. Are there any questions? Alright you can start now. (Everyone does the questionnaire.)

I am interested in what predicts how satisfied people are with their life. The two tasks that I had you do were to find out how you think about people and the way they behave. The questionnaire had items that asked you about your education, financial satisfaction, health, and about your relationships with other people. I expect to find that the people who are more satisfied with their lives will be more satisfied with their financial situation, their health and with the relationships that they have with their family and friends. Now this does not necessarily mean that more

is better, but probably it depends on what each person feels is satisfying. For example, you could see your friends only once a month and be satisfied with this amount of social time, whereas another person that sees his or her friends the same amount of time might not be satisfied with this. So, it does not depend so much on what is normal for most people, but what each person is satisfied with. What each one of you believe to be necessary for a satisfactory life will also affect how satisfied you are with your own life when you compare it to your ideal. At least this is what I am expecting to find. Are there any questions? (Answer questions.) THANK YOU SO MUCH for sharing some of your time with me and helping me to complete this study. Have a nice day.

APPENDIX C

Take-home Instructions

This is a research project on life satisfaction in people over 60 years old, which is being conducted by Gale Gray, a graduate student at the College of William and Mary. This project includes two short tasks and a questionnaire. There are no right or wrong answers for any part of this study, so do not feel that you have to answer one way or another. I hope you will find the project interesting and I thank you for volunteering to help me with this project.

INSTRUCTIONS

Part One - Social tasks Booklet

Task #1

For this task I want you to think about two people you know well, but they should not be members of your family. Just write down a brief description of what each person is like and what kind of people they are.

Sometimes it helps to approach this task by thinking that you are telling a friend about these people and your friend does not know them. Write down the things you might tell your friend about these two people. You can make a list of the information or you can write it in paragraph form, whatever is easiest for you. Whatever comes to mind when you think of these people is fine, just write it down. Remember there are no right or wrong answers. You do not need to fill up the page, but you can if you need all the

room. When you run out of ideas for the first person, go on to the description of the second person. Use the first two pages in the Social Tasks Booklet labeled "Person 1" and "Person 2."

Task #2

For this task there are two stories for you to read, but these stories only have a beginning and an end. The stories are printed on top of the pages labeled "Story 1" and "Story 2" in the Social Tasks Booklet. The beginning of these stories tells you about a person that wants to accomplish something and at the end of the story the person accomplishes his/her goal. I want you to complete the story by filling in the events that might have occured between them. Just write down what kinds of things the person might have done to obtain that goal. Again you can either make a list of the things or write them in paragraph form and you should not feel that you have to fill up the page. When you run out of ideas for the first story, go on to the second story. After you have finished the Social Tasks Booklet you can start on the Questionnaire.

Part Two - Questionnaire.

You will be answering questions about your background, health and social support. Most of the questions are self-explanatory, but there is one section that seems to be a little confusing so I will try to explain it better now and give you an example. This is the section on page 6 where I

ask you to list the people who you think are your important social contacts. First, I want you to think of one person with whom you interact socially, then put their initials in the space under the Initials column. Next, check off in the Relation Categories column how they are related to you, for example are they your spouse, grandchild or an acquaintance. Finally, check in the last column how often you see them. Here is an example of what your form should look like for one person:

INITIALS	RELATION CATEGORIES	HOW OFTEN I SEE THEM
_____	____Spouse	____Almost once/day
	____Child	____A few times/week
	____Grandchild	____A few times/month
	____Sibling	____Once a month
	____Other relative	____A few times/year
	____Acquaintance	____Once a year
	____Intimate friend	____Once every few years

After you finish one person go on to another person until you have gone through all the people you feel are most important to you. I have included 3 pages for this section, but not everyone will have that many people to include, so do not think that you have to fill up all the pages. When you finish this section go on and answer the rest of the questions.

THANK YOU so much for your time and the effort you have used in helping me with this project.

GALE GRAY

APPENDIX D

Subject Number _____

Social Tasks Booklet

Gale Gray

College of William and Mary

PERSON 1

PERSON 2

STORY 1

Mr. A. was listening to people speak at a meeting about how to make things better in the neighborhood. He wanted to say something important and have a chance to be a leader too. The story ends with him being elected leader and presenting a speech. Please begin the story at the meeting where he wanted to have a chance to be a leader.

STORY 2

Mrs. P. had just moved in that day and did not know anyone. She wanted to have friends in the neighborhood. The story ends with her having many friends and feeling at home in the neighborhood. Please being the story with Mrs. P. in her room immediately after arriving in the neighborhood.

APPENDIX E

Subject Number _____

Questionnaire Booklet

Gale Gray

College of William and Mary

Please answer the following questions as they apply to you.
Circle T if the statement is true or mostly true for you.
Circle F if the statement is false.

(1) I am just as happy as when I was younger. T F

(2) Compared to other people my age, I make a good appearance. T F

(3) I feel old and somewhat tired. T F

(4) I would not change the past even if I could. T F

(5) These are the best years of my life. T F

(6) As I look back over my life, I am fairly well satisfied. T F

(7) In spite of what some people say, the lot of the average man is getting worse, not better. T F

(8) My life could be happier than it is now. T F

(9) I feel my age, but it does not bother me. T F

(10) Compared to other people my age, I've made a lot of foolish decisions in my life. T F

(11) I expect some interesting and pleasant things to happen to me in the future. T F

(12) I have gotten more of the breaks in life than most of the people I know. T F

(13) This is the dreariest time of my life. T F

(14) I have made plans for things I'll be doing a month or a year from now. T F

(15) When I think back over my life, I didn't get most of the important things I wanted. T F

(16) Most things I do are boring or monotonous. T F

(17) As I grow older, things seem better than I thought they would. T F

(18) Compared to other people, I get down in the dumps too often. T F

(19) The things I do are as interesting to me as they ever were. T F

(20) I've gotten pretty much what I expect out of life. T F

Please check the highest level of education you have completed.

_____ elementary school

_____ some high school

_____ high school diploma/GED

_____ some college classes

_____ A.S. degree

_____ B.A. degree

_____ some graduate classes

_____ M.A. degree

_____ Phd. degree

_____ M.D. degree

Please check your average annual income. Please state your age.

_____ below $5,000.

_____ $5,000. - $9,999. AGE _____

_____ $10,000. - $14,999.

_____ $15,000. - $24,999.

_____ $25,000. - $34,999.

_____ $35,000. - $44,999.

_____ over $45,000.

Do you feel that your income adequately meets your needs? ___ yes ___ no

Check each of the needs that you feel are adequately supplied by your income.

_____ daily needs

_____ unexpected expenses

_____ medical expenses

_____ leisure activities

Please check each of the following roles you fulfill and how often you participated in each role during the preceding month.

_____ Parent

____not at all ____once or twice ____about once a week

____more than twice a week ____about every day

_____ Grandparent

____not at all ____once or twice ____about once a week

____more than twice a week ____about every day

_____ Spouse

____not at all ____once or twice ____about once a week

____more than twice a week ____about every day

_____ Friend

____not at all ____once or twice ____about once a week

____more than twice a week ____about every day

_____ Committee member

____not at all ____once or twice ____about once a week

____more than twice a week ____about every day

_____ Neighbor

____not at all ____once or twice ____about once a week

____more than twice a week ____about every day

_____ Church member

____not at all ____once or twice ____about once a week

____more than twice a week ____about every day

_____ Club/Association member

____not at all ____once or twice ____about once a week

____more than twice a week ____about every day

_____ Employee/Worker

____not at all ____once or twice ____about once a week

____more than twice a week ____about every day

_____ Homemaker

____not at all ____once or twice ____about once a week

____more than twice a week ____about every day

For the following section I would like to know how often you see your friends and family. Please put each person's initials in the first column. Then check which relation category they belong to, and how often you see them over a one year period.

INITIALS	RELATION CATEGORIES	HOW OFTEN I SEE THEM
_____	____Spouse	____Almost once/day
	____Child	____A few times/week
	____Grandchild	____A few times/month
	____Sibling	____Once a month
	____Other relative	____A few times/year
	____Acquaintance	____Once a year
	____Intimate friend	____Once every few years
_____	____Spouse	____Almost once/day
	____Child	____A few times/week
	____Grandchild	____A few times/month
	____Sibling	____Once a month
	____Other relative	____A few times/year
	____Acquaintance	____Once a year
	____Intimate friend	____Once every few years
_____	____Spouse	____Almost once/day
	____Child	____A few times/week
	____Grandchild	____A few times/month
	____Sibling	____Once a month
	____Other relative	____A few times/year
	____Acquaintance	____Once a year
	____Intimate friend	____Once every few years
_____	____Spouse	____Almost once/day
	____Child	____A few times/week
	____Grandchild	____A few times/month
	____Sibling	____Once a month
	____Other relative	____A few times/year
	____Acquaintance	____Once a year
	____Intimate friend	____Once every few years
_____	____Spouse	____Almost once/day
	____Child	____A few times/week
	____Grandchild	____A few times/month
	____Sibling	____Once a month
	____Other relative	____A few times/year
	____Acquaintance	____Once a year
	____Intimate friend	____Once every few years
_____	____Spouse	____Almost once/day
	____Child	____A few times/week
	____Grandchild	____A few times/month
	____Sibling	____Once a month
	____Other relative	____A few times/year
	____Acquaintance	____Once a year
	____Intimate friend	____Once every few years

Please check how often the following statements apply to you.

I have trouble thinking of what to say when I am with a group of people.

____Always ____Usually ____Sometimes ____Seldom ____Never

I am unable to tell whether or not someone has understood what I have said.

____Always ____Usually ____Sometimes ____Seldom ____Never

When I give directions to another person, the directions are accurate.

____Always ____Usually ____Sometimes ____Seldom ____Never

I become confused during conversations.

____Always ____Usually ____Sometimes ____Seldom ____Never

When I speak with others, my ideas are clearly and concisely presented.

____Always ____Usually ____Sometimes ____Seldom ____Never

I have a hard time asking people to do things for me.

____Always ____Usually ____Sometimes ____Seldom ____Never

When I talk to people I become nervous.

____Always ____Usually ____Sometimes ____Seldom ____Never

I feel lonely.

____Always ____Usually ____Sometimes ____Seldom ____Never

I see enough of my friends.

____Always ____Usually ____Sometimes ____Seldom ____Never

I am satisfied with my friends.

____Always ____Usually ____Sometimes ____Seldom ____Never

I wish I could see more people.

____Always ____Usually ____Sometimes ____Seldom ____Never

I see enough of my relatives.

____Always ____Usually ____Sometimes ____Seldom ____Never

I am satisfied with the way I get along with my relatives.

____Always ____Usually ____Sometimes ____Seldom ____Never

Are you now troubled by any lasting or continuing health problems, or handicaps?

_____ yes _____ no

If you answered yes to the above question please check any of the follow problems you have.

_____ Asthma

_____ Tuberculosis

_____ Chronic bronchitis

_____ Emphysema

_____ Any other chronic lung trouble

_____ Allergies affecting breathing

_____ Any other allergy

_____ Rheumatic fever

_____ Hardening of the arteries

_____ High blood pressure (hypertension)

_____ Heart attacks (coronary)

_____ Heart trouble

_____ Stroke

_____ Trouble with varicose veins

_____ Hemorrhoids or piles

_____ Tumor, cyst, or growth

_____ Cancer

_____ Chronic gallbladder or liver trouble

_____ Stomach ulcer

_____ Other chronic stomach trouble

_____ Kidney stones or chronic kidney trouble

_____ Arthritis or rheumatism

_____ Diabetes

_____ Thyroid trouble or goiter

_____ Epilepsy or seizures

_____ Multiple sclerosis

_____ Alcohol or drug problems

_____ Chronic nervous trouble

_____ Hernia or rupture

_____ Deafness or serious trouble hearing

_____ Serious trouble seeing, even when wearing glasses

_____ Missing legs or feet

_____ Missing arms or hands

_____ Chronic stiffness or any deformity of the foot, leg, arm, or hand

_____ Repeated trouble with back or spine

_____ Chronic stiffness or deformity of the back or spine

_____ other (please explain) _____

Have you been hospitalized in the last year?

_____ no

_____ yes (why?) _____

for how long? _____

Please list any medications you are currently taking.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Please rate your health for this past year.

_____ excellent

_____ above average

_____ average

_____ below average

_____ poor

How would you rate your health compared to other people's health that are your age?

_____ better

_____ about the same

_____ worse

This completes the questionnaire. Please go back and make sure yo did not accidentally skip any pages.

THANK YOU VERY MUCH

GALE GRAY

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